

Work Order ID 130322

Thursday, March 12, 2015 9:25:37 AM

130322

Page 1

Item ID: D119-646-212 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Skidtube RH with Run-on Landing Wearplates
Start Date: 3/5/2015 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 3/6/2015 Req'd Qty: 1.00 ***1*** Customer: CAGUS02
Reference: RMA RA111753-3

Approvals: Process Plan: MF Date: 5-3-12 Tooling: Date: Run Start ***NR1***
QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr							21 9-89	16-TO-21 NOV 0 3 2016
IIN-D119-646	C								

100 0.00
100
QC 0.00
Quality Control
98791
Memo
INSPECT RA 111753-3
D119-646-212 X 1 B101896
GROUND HANDLING HOLES DON'T ALIGN WITH CUSTOMER WHEEL
ASSEMBLY
REWORK PER RS1015

110 0.00
110
Skidtubes 0.00
Skidtubes
Memo
Rework per RS1015

[Handwritten signature]

DAS
28
9-89

NOV 0 2 2016

DART Dart Aerospace Ltd. 1270 ABERDEEN ST. HAWKESBURY, ON, CANADA K6A 1K7				TC APPROVAL # 09-0 TEL: 1-613-632-520	
P/N	D119-646-212	CHG		CHG004	
DESC.	Skidtube STD, RH	STC		SR02024SE	
LOT	B101896	STC			
MODEL	Agusta A119/AW119MKII	STC			
PATENTS US #5735484 CA #2222184 EUROPEAN No # 0828655				MADE IN CANADA D2729	

(1x) f H 16104/27 **DAS 15 99**
* PTO =>

B130322RH

2 Web @ Rev B

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐															
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Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐															
Large Fab ☐	Composite ☐	Supplier ☐																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence
		☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge
		☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other

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Item ID: D119-646-212 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Skidtube RH with Run-on Landing Wearplates
Start Date: 3/5/2015 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 3/6/2015 Req'd Qty: 1.00 ***1*** Customer: CAGUS02
Reference: RMA RA111753-3

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC5- Inspect part completeness to step on W/O	0.00							DAS 38 9-89
120									DAS 19 9-89
QC	Memo	0.00							SEP 29 2016
Quality Control									
130	Identify as per dwg & Stock Location: <i>F9084</i>	0.00							
130									DAS 28 9-89
Packaging	Memo <i>CHG 004</i>	0.00							NOV 03 2016
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
140									DAS 21 9-89
QC	Memo	0.00							NOV 03 2016
Quality Control									NOV 03 2016

NOV 03 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐															
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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Picklist Print

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Page 1

Work Order ID: 130322

130322

Parent Item: D119-646-212

D119-646-212

Parent Item Name: Skidtube RH with Run-on Landing Wearplates

Start Date: 3/5/2015

Required Date: 3/6/2015

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP RevA: New issue DD verified by:EC
12.09.12 as per ECN12-644 DD verf:JLM IPP Rev:B
raise to chg003 (ECN 12-675) DD verf:JLM IPP REV:C 12.11.05
chg004 (ECN 13-534) DD verf:JLM IPP REV:D 13.03.20 raise to
14-628) DD verf:JLM IPP REV:E 14.11.25 IIN REV.C (ECN

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D119-646-212		Manufactured	No				Each	0.0000		1			

D119-646-212

Skidtube RH with Run-on Landing Wearplates

**

130322

ME

15-3-12

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
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Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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Page 1

Work Order ID: 130322

130322

Parent Item: D119-646-212

D119-646-212

Parent Item Name: AW119 Skidtube with Heavy Duty Wearplates - RH

Start Date: 3/5/2015

Required Date: 3/6/2015

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP RevA: New issue DD verified by:EC
12.09.12 as per ECN12-644 DD verf:JLM IPP Rev:B
raise to chg003 (ECN 12-675) DD verf:JLM IPP REV:C 12.11.05
chg004 (ECN 13-534) DD verf:JLM IPP REV:D 13.03.20 raise to
14-628) DD verf:JLM IPP REV:E 14.11.25 IIN REV.C (ECN

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN3C50A		Purchased	No				Each	0.0000		8			
AN3C50A									**	13.595		OCT 25 2016	
Bolt													
AN4C6A		Purchased	No				Each	417.0000		12			
AN4C6A									**				
Bolt													

Location	Loc Qty	Loc Code
FG	14	
103344	4	
121657	10	
OVER002	220	
m135470	145	
m135603	75	
ST345	183	
m135297	10	
m135470	173	

D119-646-212 Manufactured No

D119-646-212

AW119 Skidtube with Heavy Duty Wearplates - RH

Location	Loc Qty	Loc Code
FG084	5	
124435	1	
129042	1	
129043	1	
129044	1	
129045	1	

Picklist Print

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Page 2

Work Order ID: 130322

130322

Parent Item: D119-646-212

D119-646-212

Parent Item Name: AW119 Skidtube with Heavy Duty Wearplates - RH

Start Date: 3/5/2015

Required Date: 3/6/2015

Start Qty: 1.00

Required Qty: 1.00

D119-646-311

Manufactured No

Each 5.0000

D119-646-311

Ground Handling

**

DAS
6
9-89

OCT 20 2016

DAS
28
9-89

Location

Loc Qty

Loc Code

ST636a

5

130012

4

130013

1

D2652

Manufactured No

Each 380.0000

D2652

Bushing

**

DAS
6
9-89

OCT 20 2016

DAS
28
9-89

Location

Loc Qty

Loc Code

FG

44

31985

44

ST009

336

149586

22

149681

108

149828

206

D2712

Manufactured No

Each 314.0000

D2712

Set Screw

**

DAS
6
9-89

OCT 20 2016

DAS
28
9-89

Location

Loc Qty

Loc Code

FG

50

29962

50

ST010

264

140532

9

147801

45

149148

50

149832

100

151290

50

89929

10

Picklist Print

Thursday, October 20, 2016 1:45:03 PM

Page 3

Work Order ID: 130322

130322

Parent Item: D119-646-212

D119-646-212

Parent Item Name: AW119 Skidtube with Heavy Duty Wearplates - RH

Start Date: 3/5/2015

Required Date: 3/6/2015

Start Qty: 1.00

Required Qty: 1.00

D3407-041

Manufactured No

Each 15.0000

D3407-041

Tow Ring

**

1

DAS
6
9-89

OCT 20 2016

DAS
28
9-89

Location

Loc Qty

Loc Code

st530

15

148623

5

151431

10

D3417-5

Manufactured No

Each 105.0000

D3417-5

Washer

**

2

DAS
6
9-89

OCT 20 2016

DAS
28
9-89

Location

Loc Qty

Loc Code

ST035

25

148700

25

ST038A

80

149255

40

151493

40

D3456-1

Manufactured No

Each 65.0000

D3456-1

Washer

**

1

DAS
6
9-89

OCT 20 2016

DAS
28
9-89

Location

Loc Qty

Loc Code

FG

7

25701

7

ST037

58

149551

8

150652

50

Picklist Print

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Page 4

Work Order ID: 130322

130322

Parent Item: D119-646-212

D119-646-212

Parent Item Name: AW119 Skidtube with Heavy Duty Wearplates - RH

Start Date: 3/5/2015

Required Date: 3/6/2015

Start Qty: 1.00

Required Qty: 1.00

D3672-3

Manufactured No

Each

1,268.000

24

OCT 20 2016

DAS
6
9-89

D3672-3

Washer, Phenolic

DAS
28
9-89

Location

Loc Qty

Loc Code

FG	100	
133083	52	
134449	48	
FP001	213	
132639	213	
ST049	455	
149295	455	24
ST051A	500	
151298	500	

D3672-7

Manufactured No

Each

861.0000

24

OCT 20 2016

DAS
6
9-89

D3672-7

Washer, Phenolic

DAS
28
9-89

Location

Loc Qty

Loc Code

FG	40	
129987	25	
133986	15	
ST049	321	
149431	321	24
ST051A	500	
150867	500	

D3883-2

Manufactured No

Each

10.0000

2

DAS
6
9-89

OCT 20 2016

D3883-2

Saddle, Outside RH

DAS
28
9-89

Location

Loc Qty

Loc Code

ST404	10	
149623	10	2

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Shop Packet Print

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Picklist Print

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Work Order ID: 130322

130322

Parent Item: D119-646-212

D119-646-212

Parent Item Name: AW119 Skidtube with Heavy Duty Wearplates - RH

Start Date: 3/5/2015

Required Date: 3/6/2015

Start Qty: 1.00

Required Qty: 1.00

D3884-2

Manufactured No

Each

10.0000

D3884-2

Saddle, Inside RH

OCT 20 2016

DAS
6
9-89

DAS
28
9-89

Location

Loc Qty

Loc Code

ST404

10

149576

4

150388

6

MS21043-3

Purchased

No

Each

1,348.000

MS21043-3

Nut

OCT 20 2016

DAS
6
9-89

DAS
28
9-89

Location

Loc Qty

Loc Code

CCK007

400

m135864

400

FG

80

103691

80

FP001

11

m130673

11

GA

133

m133990

133

OVER007

400

m135704

400

ST302

255

m135544

255

ST304

69

m131340

69

Picklist Print

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Work Order ID: 130322

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Parent Item: D119-646-212

D119-646-212

Parent Item Name: AW119 Skidtube with Heavy Duty Wearplates - RH

Start Date: 3/5/2015

Required Date: 3/6/2015

Start Qty: 1.00

Required Qty: 1.00

MS21043-4

Purchased

No

Each

825.0000

MS21043-4

**

Nut

DAS
28
9-89

Location

Loc Qty

Loc Code

FG	40	
104603	40	
GA	17	
m132803	17	
ST302	768	
m135407	1	
m135530	267	
m135600	500	

13
DAS
6
9-89

OCT 20 2016

MS21250-05-006

Purchased

No

Each

138.0000

MS21250-05-006

**

BOLT

DAS
28
9-89

Location

Loc Qty

Loc Code

FG	10	
124291	10	
over006	60	
M131379	30	
M133234	30	
ST295	68	
M125646	16	
m125769	8	
M131620	20	
M133606	24	

8
DAS
6
9-89

OCT 20 2016

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Work Order ID: 130322

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Parent Item: D119-646-212

D119-646-212

Parent Item Name: AW119 Skidtube with Heavy Duty Wearplates - RH

Start Date: 3/5/2015

Required Date: 3/6/2015

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0332R

Purchased

No

Each

3,934.000

NAS1149C0332R

WASHER

DAS
28
9-89

Location

Loc Qty

Loc Code

FP001

394

m135274

394

GA

86

m133284

86

ST260a

2000

m135466

1000

m135672

1000

ST266

1454

m135408

754

m135766

500

m135908

200

**

8
DAS
6
9-89

OCT 20 2016

NAS1149C0432R

Purchased

No

Each

1,211.000

NAS1149C0432R

WASHER

DAS
28
9-89

Location

Loc Qty

Loc Code

GA

800

m125807

427

m134676

373

ST266

411

m135544

411

**

24
DAS
6
9-89

OCT 20 2016

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Work Order ID: 130322

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Parent Item: D119-646-212

D119-646-212

Parent Item Name: AW119 Skidtube with Heavy Duty Wearplates - RH

Start Date: 3/5/2015

Required Date: 3/6/2015

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0532R

Purchased

No

Each

477.0000

8

NAS1149C0532R

WASHER

OCT 20 2016

DAS
28
9-89

Location

Loc Qty

Loc Code

GA	60	
116513	60	
ST260a	200	
m135390	200	
ST266	217	
m135671	201	
m134756	16	

DART AEROSPACE LTD	Work Order:	130322
Description: Repair Scheme D119-646-241 Skid tubes FWD GHW holes do not align NCR 14-3771 For tubes in production and Returned tubes		
Drawing: D3887	Repair Scheme:	RS1015
Part No: D119-646-241	Page:	1 of 1
Batch No:	Qty:	1

Step	Location	Procedure	By	Date	Qty
1	Finishing	Remove FWD & AFT caps D2855-3. Clean all sikaflex off cap & identify per each tube caps was removed (P/N & B#)	DD	15-6-30	
2	Skidtube	Drill out & remove FWD Cross bolt spacers D2579 in Detail C on Dwg D3887 <i>Host Aft only. 15-6-30</i>	DD	15-6-30	
3	Skidtube	Reposition location of holes as per Drawing but using <u>+/-0.005" tol</u> and per symmetrical in QSI 018	DD	15-6-30	
4	Skidtube	TACK ONLY Cross bolt spacers D2579 B <u>123892</u> <i>Qty: 2</i>	BE	15-06-30	(1)
5	QC	Location MUST be verified by QC Record Dims HERE	DAS 9 9-89	15-06-30	(2)
6	Skidtube	Weld as per QSI 004 A/R <u>M131562</u> Back Drill Grind welds flush & deburr	BE	15-06-30	(1)
7	QC	QC 10 & 5 Inspection ***TEST FIT GHW WHEELS*** <u>Pass</u> ☐	DAS 9 9-89	15-07-07	(1)
8	Purchasing	Send tube to be striped as per QSI004 PO# <u>Inhouse</u>	DAS 41 9-89	16-2-1	(1)
9	Receiving	Receive & Inspect for Damage & Material certs <i>N/A</i>	DAS 9		
10	QC	QC 6 Inspect For Damage and verify that certs match <i>N/A</i>			
11	Finishing	Touch up alodine as per QSI 005	DAS 41 9-89	16-2-1	(1)
12	Finishing	Re-Powder coat per QSI 005 <i>START: 9:00 21.7.30 FINISH 9:30</i>	DAS 15 9-89	16-09-26	(1)
13	Finishing	Re-assemble original caps back on tubes Sikaflex B <u>M135376</u> exp <u>16/12</u>	DAS 15 9-89	16/09/27	41
14	QC	QC 3 inspect	DAS 38 9-89	SEP 29 2016	1
15	QC	QC 5 inspect	DAS 38 9-89	SEP 29 2016	1
16	QC	QC21	DAS 21 9-89	NOV 03 2016	

Rev	Date	Change Description	Prepared	Checked	Approved
B	14.10.21	New Issue	ED		

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐															
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐															
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐															
Large Fab ☐	Composite ☐	Supplier ☐																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
--	--	---	--

RA111753-3

Received @ Dart 2014
Inspected@ Dart March 3rd, 2015

CUSTOMER: AGUSTA WESTLAND
CUSTOMER CONTACT: MARTIN CAMERON
SHIPPED FROM: N/A

Instructions for RA111753-3

D119-646-211 B93012 CHG 004

- Ground handling holes doesn't align with customer wheel assembly
- Rework as per RS1015

D119-646-212 B101896 CHG 004

- Ground handling holes doesn't align with customer wheel assembly
- Rework as per RS1015

Time Estimate = N/A

Departments Required: Quality, Landing gear

Pictures Attached = N/A

QTY INSPECTED = 1x D119-646-211 B93012

1x D119-646-212 B101896

**THIS INSTRUCTION SHEET
MUST BE ATTACHED TO THE
RESTOCKING WORK ORDER
AT ALL TIMES!!!!**

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐															
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐															
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐															
Large Fab ☐	Composite ☐	Supplier ☐																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D119-646 REV. B,
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D119-646 REV. 1 OR EARLIER,
REF. FAA STC SR02024SE

1.0 PURPOSE

The purpose of this DSI is to provide instructions for customers to modify the forward end of the D119-646-XXX skidtubes using the DSI 9594-011 Kit to make the skidtubes compatible with the Agusta ground handling wheels. One kit modifies 2 skidtubes. After CHG 001, portions of this modification may have been incorporated in production and therefore will not need to be incorporated in the field.

2.0 PROCEDURE

Modify the skidtubes as follows:

- 2.1 Rotate the D3407-041 Tow Ring to the vertical position as necessary.
- 2.2 Mark holes in the center ridge as shown in Figure 1. Drill through skidtube with $\varnothing 0.500"$ (12.7 mm drill), and countersunk to $\varnothing 0.650 \times 100^\circ$, two places per side.
- 2.3 Remove and discard the hardware retaining the forward Cap. Countersink the existing holes to $\varnothing 0.385 \times 100^\circ$.
- 2.4 Deburr holes. Touch up affected areas with chemical film material (Alodine 1200 or 1201) per MIL-C-5541.
- 2.5 Bond D2579 spacers into the $\varnothing 0.500$ holes center in the skidtube using Magnobond 6398. Grind flush prior painting as shown in Figure 1.
- 2.6 Apply one coat of MIL-P-85582 or MIL-P-2337 primer and 2-3 coats of MIL-C-83285 polyurethane coat to match original finish.
- 2.7 Fasten the forward Cap using MS24694-C52 Screws. Seal threads with Proseal 890. Ensure that screw heads sit below skidtube surface
- 2.8 Repeat steps 2.1 to 2.7 for opposite skidtube.

3.0 PART LIST

Qty -011	PART NUMBER	DESCRIPTION
X	DSI 9594-011	FWD GROUND HANDLING SPACER KIT
4	D2579	CROSS BOLT SPACER
4	MS24694-C52	SCREW

4.0 WEIGHT AND BALANCE

This modification has negligible effect on weight and balance.

B	ADD INSTRUCTION TO REMOVE EXISTING CAP MOUNTING HARDWARE AND REPLACE WITH COUNTERSUNK SCREWS	DB	13.02.20
A	NEW ISSUE	RF	12.02.03
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	DB	KENT, WA	
CHECKED	MB	DRAWING NO.	REV. B
MFG. APPR.	N/A	DSI 9594	SHEET 1 OF 2
APPROVED		TITLE	SCALE
DE APPR.		FWD GROUND HANDLING SPACER KIT	NTS
DATE	13.02.20	COPYRIGHT © 2012 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

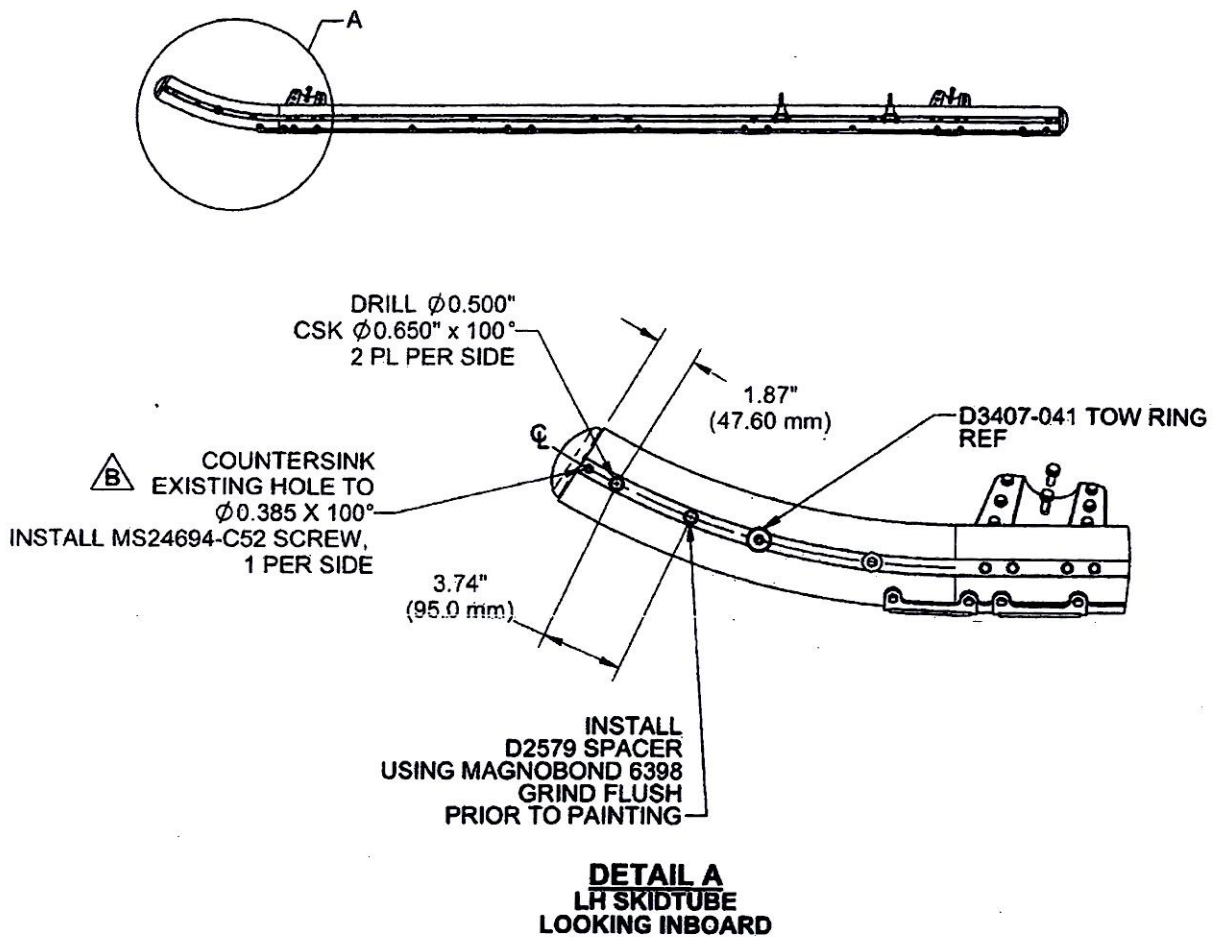
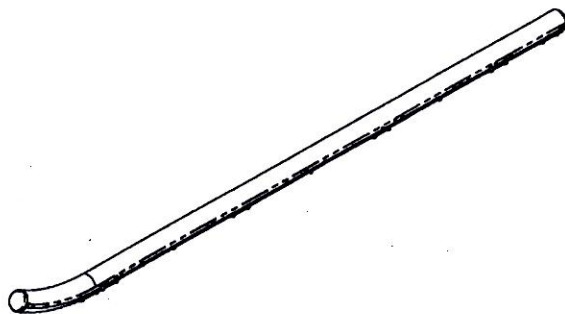


FIGURE 1. MODIFIED D119-646-XXX SKIDTUBE

DESIGN	RF	DART AEROSPACE USA, INC	
DRAWN	DB	KENT, WA	
CHECKED	MB	DRAWING NO.	REV. B
MFG. APPR.	N/A	DSI 9594	SHEET 2 OF 2
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	FWD GROUND HANDLING SPACER KIT	NTS
DATE	13.02.20	COPYRIGHT © 2012 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	



D3887-041 STANDARD SKIDTUBE ASSY WITH WEARPAD (SHOWN)
D3887-043 STANDARD SKIDTUBE ASSY WITH WEARPLATE (SIMILAR)
D3887-045 STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE (SIMILAR)

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3885-1 WEB
POWDER COAT "WHITE" (4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D3887-041 = 32.0 lbs
D3887-043 = 37.0 lbs
D3887-045 = 38.1 lbs
- 8) WELD PER DART QSI 004
- 9) DAMAGE TOLERANCE ON FWD BEND:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 8.5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020" DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 10) INSERT D3885-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/291 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP
- 11) INSERT D3492-045 PLUG ASSY INTO Ø0.197 HOLES (BOTH SIDES OF TUBE)
- 12) USE DART DRILL TEMPLATE DT8931 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARPLATE INSERTS. INSTALL AEL5-1032-130 INTO D3887-11 ONLY. INSTALL AN3C5A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/291.

ITEM	QTY -041	QTY -043	QTY -045	P/N	DESCRIPTION
1	X			D3887-041	STD SKIDTUBE ASSY WITH WEARPAD
2		X		D3887-043	STD SKIDTUBE ASSY WITH WEARPLATE
3			X	D3887-045	STD SKIDTUBE ASSY WITH TRAINING WEARPLATE
10	2	2	2	D2579	CROSS BOLT SPACER
11	2	2	2	D2855-3	CAP
12	16	16		D3492-045	PLUG ASSY
13	2	2	2	D3872-1	PHENOLIC WASHER
14	8	8	8	D3881-1	SPACER
17	5	5		D3847-1	WEARPAD
18	1	1		D3847-11	AFT WEARPAD
19		1		D3847-043	FWD WEARPLATE ASSY
20		1		D3847-045	CENTER WEARPLATE ASSY
21		1		D3847-047	AFT WEARPLATE ASSY
22			1	D3849-041	FWD TRAINING WEARPLATE ASSY
23			1	D3849-043	AFT WEARPLATE ASSY
24	1	1	1	D3885-1	STANDARD WEB
25	1	1		D3887-11	STANDARD SKIDTUBE
26			1	D3887-13	STANDARD SKIDTUBE
27	12	12	12	D3903-1	SPACER
28			16	D3904-1	WASHER
41	30	30		ALS4-1032-130	INSERT
42	32	32	2	AN3C5A	BOLT
43			8	AN3C46A	BOLT
44	32	32		NAS1149C0332R	WASHER (OR AN98CC10L)
45			8	MS21043-3	NUT
46	2	2	2	MS24694-C52	SCREW

RELEASED

UNDER REVIEW

2014 NOV 24
ECN 14-678

15.04.30 URF15-560 AP

D	REVISED BEND TOLERANCES FOR MANUFACTURABILITY, 135.07 WAS 134.04 (ZN D5-8), ADD 5.07 (ZN C2-8), ADD 116.8 (ZN D5-8), DELETE GASKETS (BOM, SH 2)	DB	13.09.20
C	(SHT1, PL, ZN C2-2, C2-2, C4-2) ITEM 13, QTY 2 WAS 4, ITEM 42, QTY 32 WAS 34, ITEM 44, QTY 30 WAS 32, ADD ITEM 46, MS24694-C52 WAS AN3C5A, 2 PLCS (ZN C1-5, C1-5, B4-7) Ø0.297 CSK Ø0.365 X 100" WAS Ø0.314 THRU, ADDED DETAIL F (ZN C4-5, C2-6, B3-7), ADD ITEM 10, D2579 CROSS BOLT SPACER (ZN D4-1, A6-7) ALS4-1032-130 WAS AEL5-1032-130 (ZN C4-1, C5-7, C3-7), ADD DT8931 (ZN A6-1), ADD 134.04 (ZN C4-8), D2855-3 WAS D2579 (ZN D4-1, C7-2, C2-2, C7-3, C2-3, C7-4, C2-4), AN3C5A WAS AN3C4A (ZN C2-2, C2-2, C6-3, C2-3, C2-4), C2-4), Ø0.313 WAS Ø0.309 (ZN C4-5, C4-5, C2-7 & B3-7) REVISED NOTE N (ZN B3-7)	DB	13.02.19
B		RF	09.06.30
A	NEW ISSUE	RF	09.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	DB	KENT, WA	
CHECKED		DRAWING NO.	REV. D
MFG. APPR.		D3887	SHEET 1 OF 8
APPROVED		TITLE	SCALE
DE APPR.		A119 STD SKIDTUBE ASSY	NTS
DATE	13.09.20	COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PROPRIETARY AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS COVENANT THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR FOR ANY DISSEMINATION TO ANY OTHER PERSON OR ENTITY WITHOUT THE WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

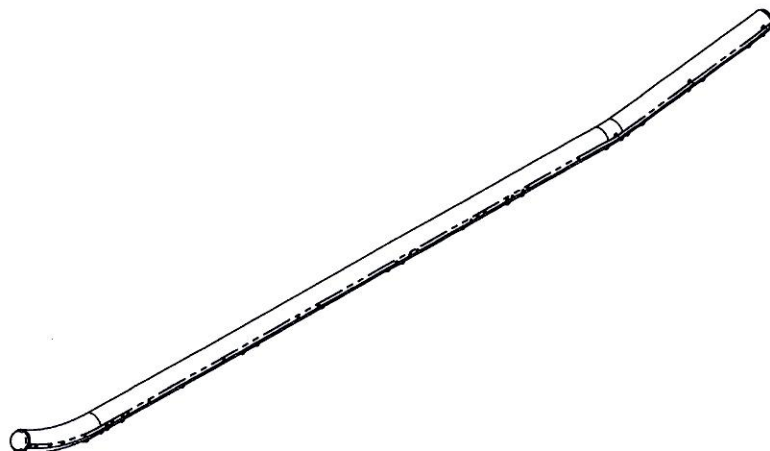
Change Record

PAGE 1 OF 1

Part Number: D119-646-211/-212

Description: STD SKIDTUBE w/ TRAINING WEARPLATES, LH/RH

[illegible]



D3905-041 FLOAT SKIDTUBE ASSY WITH WEARPAD (SHOWN)
D3905-043 FLOAT SKIDTUBE ASSY WITH WEARPLATE (SIMILAR)
D3905-045 FLOAT SKIDTUBE ASSY WITH TRAINING WEARPLATE (SIMILAR)

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3885-3 FLOAT WEB PRIME (REF. 4.2.1.3.3) AND PAINT WHITE PER DART QSI 005 4.2 BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D3905-041 = 35.4 lbs
D3905-043 = 42.8 lbs
D3905-045 = 48.0 lbs
- 8) WELD PER DART QSI 004
- 9) DAMAGE TOLERANCE ON FWD BEND:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 8.5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP 0.020" DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 10) INSERT D3885-3 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/291 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP
- 11) INSERT D3492-045 PLUG ASSY INTO $\phi 0.197$ HOLES (BOTH SIDES OF TUBE)
- 12) USE DART DRILL TEMPLATE DT8932 TO LOCATE AND DRILL $\phi 0.297$ HOLES FOR WEARPLATE INSERTS. INSTALL AELS-1032-130 INTO D3905-11 ONLY. INSTALL AN3C5A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/291.

ITEM	QTY -041	QTY -043	QTY -045	P/N	DESCRIPTION
1	X			D3905-041	FLOAT SKIDTUBE ASSY WITH WEARPAD
2		X		D3905-043	FLOAT SKIDTUBE ASSY WITH WEARPLATE
3			X	D3905-045	FLOAT SKIDTUBE ASSY WITH TRAINING WEARPLATE
10	2	2	2	D2579	CROSS BOLT SPACER
11	2	2	2	D2855-3	CAP
12			16	D3411-3	WASHER
13	16	16		D3492-045	PLUG ASSY
14	2	2	2	D3672-1	PHENOLIC WASHER
15	8	8	8	D3681-1	SPACER
16	8	8	1	D3847-1	WEARPAD
17	1	1	1	D3847-11	WEARPAD
18		1		D3847-043	FWD WEARPLATE ASSY
19		1		D3847-045	CENTER WEARPLATE ASSY
20		1		D3847-049	AFT WEARPLATE ASSY
21			1	D3849-045	AFT WEARPLATE ASSY
22			1	D3849-047	FWD WEARPLATE ASSY
23	1	1	1	D3885-3	FLOAT WEB
24	12	12	12	D3903-1	SPACER
25			16	D3904-1	WASHER
26	1	1		D3905-11	FLOAT SKIDTUBE
27			1	D3905-13	FLOAT SKIDTUBE
28	6	6	6	D5101-3	INSERT
29	6	6	6	D5101-5	INSERT
30	3	3	3	D5101-041	CROSSBOLT SPACER ASSY
41	42	42	10	ALS4-1032-130	INSERT
42	44	44	12	AN3C5A	BOLT
43			4	AN3C46A	BOLT
44			4	AN3C50A	BOLT
45	3	3	3	AN4C46A	BOLT
46	44	44	8	NAS1149C0332R	WASHER (OR AN960C10L)
47	12	12	12	NAS1149C0463R	WASHER (OR AN960C416)
48	6	6	6	NAS1149D0416J	WASHER
49			8	MS21043-3	NUT
50	3	3	3	MS21043-4	NUT
51	2	2	2	MS24694-C52	SCREW

UNDER REVIEW

15.04.30 URF15-560 AP

RELEASED

2014 NOV 24

ECN 14-028

D	REVISED DIMENSIONS AND PROVIDED TOLERANCE TO SKIDTUBE OVERALL LENGTH PAGE 5-6 REVISED NOTE 2 AND NOTE 7 PAGE 1 (ZN B8- ZN A8-1) REVISED -041/-043/-045 DRAWING VIEWS, REVISED SECTION VIEW P-F (ZN B4-7), REVISED BOM REF. PAR13-299 AND PAR13-272	AK	14.08.08
C	(SHT 1 P/L, ZN C2-2, C2-3, C2-4) ITEM 13, QTY 2 WAS 4, ITEM 42 AND 45, QTY 44 WAS 46, ADD ITEM 49, MS24694-C52 WAS AN3C5A, D3672-1 AND NAS1149C0332R (ZN C7-7) $\phi 0.201$ CSK $\phi 0.385 \times 100$ WAS $\phi 0.204$ THRU, (ZN A4-5, A4-6) ADD RELIEF INSTRUCTION, ADD ITEM 10, CROSS BOLT SPACER (ZN D4-1, C6-7, D8-7)	DB	13.02.21
B	REVISED PART LIST, ALS4-1032-130 WAS AELS-1032-130 (ZN A6-5, A5-6, C5-7, C3-7, A5-7), ADD DT8932 (ZN A8-1), D2855-3 WAS D2579 (ZN C6-2, C1-2, C6-3, C1-3, C6-4, C1-4), AN3C5A WAS AN3C4A (ZN C7-2, C1-2, C7-3, C1-3, C7-4, C1-4), D3849-047 WAS D3849-041 (ZN B3-4), ADD D3411-3 (ZN B3-4), ADD AN3C50A (ZN B3-4), $\phi 0.313$ WAS $\phi 0.328$ (B2-5, B2-6, C2-7, A8-7 & D7-6), REVISED NOTE 14 (ZN A8-7)	RF	09.06.30
D	NEW ISSUE	RF	09.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	ML	DART AEROSPACE USA, INC. KENT, WA	
DRAWN	RF		
CHECKED	VS	DRAWING NO.	REV. D
MFG. APPR.	DD	D3905	SHEET 1 OF 8
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 FLOAT SKIDTUBE ASSY	NTS
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APPROVED

93020

DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D119-646 REV. B,
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D119-646 REV. 1 OR EARLIER,
REF. FAA STC SR02024SE

1.0 PURPOSE

The purpose of this DSI is to provide instructions for customers to modify the forward end of the D119-646-XXX skid tubes using the DSI 9594-011 Kit to make the skid tubes compatible with the Agusta ground handling wheels. One kit modifies 2 skid tubes. After CHG 001, portions of this modification may have been incorporated in production and therefore will not need to be incorporated in the field.

2.0 PROCEDURE

Modify the skid tubes as follows:

- 2.1 Rotate the D3407-041 Tow Ring to the vertical position as necessary.
- 2.2 Mark holes in the center ridge as shown in Figure 1. Drill through skid tube with Ø0.500" (12.7 mm drill), and countersunk to Ø0.650 x 100°, two places per side.
- 2.3 Remove and discard the hardware retaining the forward Cap. Countersink the existing holes to Ø0.385 x 100°.
- 2.4 Deburr holes. Touch up affected areas with chemical film material (Alodine 1200 or 1201) per MIL-C-5541.
- 2.5 Bond D2579 spacers into the Ø0.500 holes center in the skid tube using Magnobond 6398. Grind flush prior painting as shown in Figure 1.
- 2.6 Apply one coat of MIL-P-85582 or MIL-P-2337 primer and 2-3 coats of MIL-C-83285 polyurethane coat to match original finish.
- 2.7 Fasten the forward Cap using MS24694-C52 Screws. Seal threads with Proseal 890. Ensure that screw heads sit below skid tube surface
- 2.8 Repeat steps 2.1 to 2.7 for opposite skid tube.

3.0 PART LIST

Qty -011	PART NUMBER	DESCRIPTION
X	DSI 9594-011	FWD GROUND HANDLING SPACER KIT
4	D2579	CROSS BOLT SPACER
4	MS24694-C52	SCREW

4.0 WEIGHT AND BALANCE

This modification has negligible effect on weight and balance.

B	ADD INSTRUCTION TO REMOVE EXISTING CAP MOUNTING HARDWARE AND REPLACE WITH COUNTERSUNK SCREWS	DB	13.02.20
A	NEW ISSUE	RF	12.02.03
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	DB	KENT, WA	
CHECKED	MB	DRAWING NO.	REV. B
MFG. APPR.	N/A	DSI 9594	SHEET 1 OF 2
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	FWD GROUND HANDLING SPACER KIT	NTS
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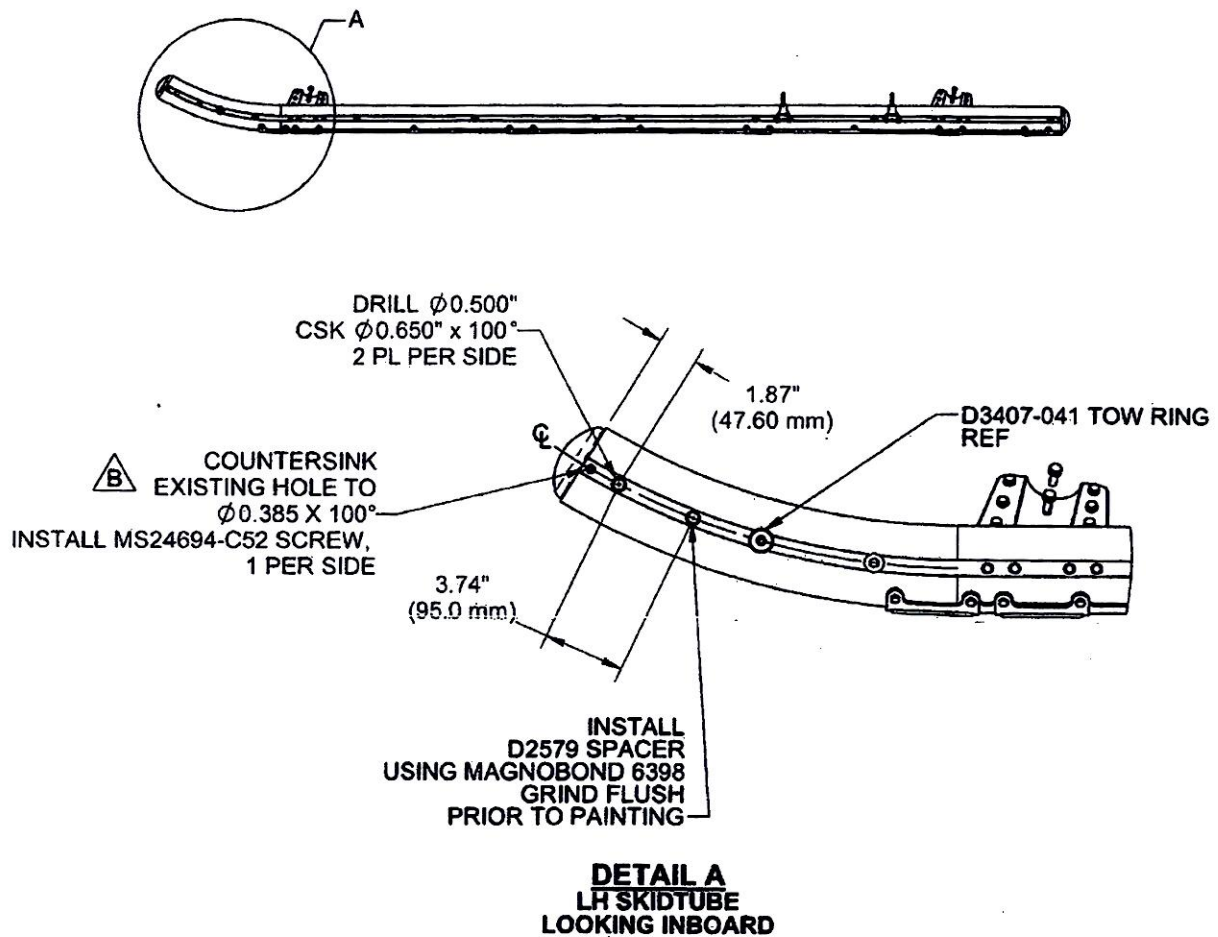


FIGURE 1. MODIFIED D119-646-XXX SKIDTUBE

DESIGN	RF	DART AEROSPACE USA, INC	
DRAWN	DB	KENT, WA	
CHECKED	MB	DRAWING NO.	REV. B
MFG. APPR.	N/A	DSI 9594	SHEET 2 OF 2
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	FWD GROUND HANDLING SPACER KIT	NTS
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Change Record

PAGE 1 OF 1

Part Number: D119-646-113/-114

Description: FLOAT SKIDTUBE w/ FULL LENGTH WEARPLATES & WEARPADS, LH/RH[illegible]

New PARTS:

PART NO:	BATCH NO:	QUANTITY:
D2855-3 (END-CAP)	B142564	X 2
D3672-1 (washers)	B134785	X 2
D3904-1 (washers)	B133289	X 16
AN3C5A (bolts)	M135297	X 2
AN3C46A (bolts)	M132522	X 8
M521043-3 (NUTS)	M131346	X 8
M524694-C52 (screws)	M135466	X 2

Status	Item ID	Rev	Name	Start Date	Quantity	UOM	Op	Dae	Scrap	Quinnend	NC	ISort	Offin	Ty	Per	ch	to	ore	C	Last
	AN3C50A	✓	Bolt	8/21/2009	8...	Ea		11	0	0.			6	0	M					12...
	AN4C6A	✓	Bolt	8/21/2009	12...	Ea		11	0	0.			7	0	M					12...
	D119-646-241	✓	URF... AW119 Replacement Skidtube with Heavy Duty Wearpl...	12/5/2009	1...	Ea		11	0	0.			1	0	M					12...
	D119-646-311	✓	Ground Handling	12/5/2009	1...	Ea		11	0	0.			2	0	M					12...
	D2652	✓	Bushing	12/5/2009	16...	Ea		11	0	0.			5	0	M					12...
	D2712	✓	Set Screw	12/5/2009	12...	Ea		11	0	0.			14	0	M					12...
	D3407-041	✓	Tow Ring	12/5/2009	1...	Ea		11	0	0.			17	0	M					12...
	D3417-5	✓	Washer	12/5/2009	2...	Ea		11	0	0.			18	0	M					11...
	D3456-1	✓	Washer	12/5/2009	1...	Ea		11	0	0.			19	0	M					12...
	D3672-3	✓	Washer, Phenolic	12/5/2009	24...	Ea		11	0	0.			16	0	M					12...
	D3672-7	✓	Washer, Phenolic	12/5/2009	24...	Ea		11	0	0.			15	0	M					12...
	D3883-2	✓	Saddle, Outside RH	12/5/2009	2...	Ea		11	0	0.			3	0	M					12...
	D3884-2	✓	Saddle, Inside RH	12/5/2009	2...	Ea		11	0	0.			4	0	M					12...
	MS21043-3	✓	Nut	8/21/2009	8...	Ea		11	0	0.			12	0	M					12...
	MS21043-4	✓	Nut	8/21/2009	13...	Ea		11	0	0.			13	0	M					12...
	MS21250-05-006	✓	BOLT	8/21/2009	8...	Ea		11	0	0.			8	0	M					12...
	NAS1149C0332R	✓	WASHER	10/3/2013	8...	Ea		11	0	0.			9	0	M					10...
	NAS1149C0432R		WASHER	10/3/2013	24...	Ea		11	0	0.			10	0	M					10...
	NAS1149C0532R		WASHER	10/3/2013	8...	Ea		11	0	0.			11	0	M					10...

M 2010 / Ket has disappeared
 this needs to be added to the wto + printed
 so she can pull parts

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐				
Misidentified ☐	Past Due ☐	OTHER : _____			

6.0 PARTS LIST

6.1 Standard Skidtubes

Item	Qty -011	Qty -012	Qty -111	Qty -112	Qty -211	Qty -212	Qty -041	Qty -141	Qty -151	Qty -241	Qty -251	Qty -311	Part Number	Description
	X												D119-646-011	STANDARD SKIDTUBE INSTALLATION WITH WEARPADS, LH
		X											D119-646-012	STANDARD SKIDTUBE INSTALLATION WITH WEARPADS, RH
			X										D119-646-111	STANDARD SKIDTUBE INSTALLATION WITH FULL LENGTH WEARPLATES & WEARPADS, LH
				X									D119-646-112	STANDARD SKIDTUBE INSTALLATION WITH FULL LENGTH WEARPLATES & WEARPADS, RH
					X								D119-646-211	STANDARD SKIDTUBE INSTALLATION WITH TRAINING WEARPLATES, LH
						X							D119-646-212	STANDARD SKIDTUBE INSTALLATION WITH TRAINING WEARPLATES, RH
	1	1					X						D119-646-041	REPLACEMENT STANDARD SKIDTUBE WITH WEARPADS
			1	1				X					D119-646-141	REPLACEMENT STANDARD SKIDTUBE WITH FULL LENGTH WEARPLATES & WEARPADS
									X				D119-646-151	WEARPLATE KIT STANDARD SKIDTUBE
					1	1				X			D119-646-241	REPLACEMENT STANDARD SKIDTUBE WITH TRAINING WEARPLATES
											X		D119-646-251	TRAINING WEARPLATES STANDARD SKIDTUBE
	1	1	1	1	1	1						X	D119-646-311	GROUND HANDLING KIT
1							1						D3887-041	STANDARD SKIDTUBE ASSY. WITH WEARPAD
20								1					D3887-043	STANDARD SKIDTUBE ASSY. WITH WEARPLATE & WEARPAD
26									1				D3847-043	FWD WEARPLATE ASSY
27									1				D3847-045	CENTER WEARPLATE ASSY
28									1				D3847-047	AFT WEARPLATE ASSY
29									5				D3847-1	WEARPAD
30									1				D3847-11	WEARPAD
31									30				AN3C5A	BOLT
32									30				AN960C10L	WASHER (OR NAS1149C0332R)
40										1			D3887-045	STANDARD SKIDTUBE ASSY. TRAINING WEARPLATE
44											1		D3849-041	FWD TRAINING WEARPLATE ASSY
45											1		D3849-043	AFT TRAINING WEARPLATE ASSY
51											16		D3904-1	WASHER
52											8		AN3C46A	BOLT
53											8		MS21043-3	NUT
60	2		2		2								D3883-1	SADDLE, OUTSIDE, LH
61		2		2		2							D3883-2	SADDLE, OUTSIDE, RH
62	2		2		2								D3884-1	SADDLE, INSIDE, LH
63		2		2		2							D3884-2	SADDLE, INSIDE, RH
64	16	16	16	16	16	16							D2652	BUSHING
65	8	8	8	8	8	8							AN3C50A	BOLT
66	12	12	12	12	12	12							AN4C8A	BOLT
67	8	8	8	8	8	8							MS21250-05006	BOLT
68	8	8	8	8	8	8							AN960C10L	WASHER (OR NAS1149C0332R)

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Revision: C
Date: 13.08.16

Item	Qty -011	Qty -012	Qty -111	Qty -112	Qty -211	Qty -212	Qty -041	Qty -141	Qty -151	Qty -241	Qty -251	Qty -311	Part Number	Description
69	24	24	24	24	24	24							AN960C416L	WASHER (OR NAS1149C0432R)
70	8	8	8	8	8	8							AN960C516L	WASHER (OR NAS1149C0532R)
71	8	8	8	8	8	8							MS21043-3	NUT
72	12	12	12	12	12	12							MS21043-4	NUT
73	12	12	12	12	12	12							D2712	SET SCREW
74	16	16	16	16	16	16							D3672-7	WASHER
75	24	24	24	24	24	24							D3672-3	WASHER
76	8	8	8	8	8	8							D3672-7	WASHER
80	1	1	1	1	1	1							D3407-041	TOW RING
81	2	2	2	2	2	2							D3417-5	WASHER
82	1	1	1	1	1	1							D3456-1	WASHER
83	1	1	1	1	1	1							MS21043-4	NUT
90														
91												2	D3886-041	LUG ASSEMBLY
92												8	D2652	BUSHING
93												4	AN3C46A	BOLT
94												4	AN960C10L	WASHER (OR NAS1149C0332R)
												4	MS21043-3	NUT

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